

Amendments To The Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of claims:

- 1-7. (Cancelled).
8. (Presently Amended) A ~~mutagenesis method of a gene~~method of mutating a gene of a vertebrate animal, comprising the steps of:
 - a) treating a ~~germ-cell~~sperm of the vertebrate animal with a psoralen derivative;
 - b) irradiating the ~~germ-cell~~sperm with a ~~high energy beam~~UV light; and
 - c) subjecting the irradiated ~~germ-cell~~sperm to artificial fertilization ~~to induce mutagenesis in an embryo~~.
9. (Cancelled).
10. (Presently Amended) The method of claim 8 ~~or 9~~ wherein the psoralen derivative is 4,5',8-trimethylpsoralen.
11. (Presently Amended) The method ~~of claim 8 or 9~~according to claim 10, wherein ~~the psoralen derivative is 4,5',8-trimethylpsoralen and the vertebrate animal is zebrafish.~~
12. (Presently Amended) The method ~~of claim 8 or 9~~according to claim 8, wherein the ~~mutagenesis~~mutation is introduced into a region containing a pyrimidine base.
13. (Presently Amended) A method for preparation of a mutated gene of a vertebrate animal, comprising the steps of:
 - a) treating a ~~germ-cell~~sperm of the vertebrate animal with a psoralen derivative;

- b) irradiating the treated germ cell sperm with a ~~high energy beam~~ UV light; and
- c) subjecting the irradiated germ cell sperm to artificial fertilization ~~to induce~~
mutagenesis in an embryo.

14. (Cancelled).

15. (Presently Amended) The method ~~of claim 13 or 14~~ according to claim 13, wherein the psoralen derivative is 4,5',8-trimethylpsoralen.

16. (Presently Amended) The method ~~of claim 13 or 14~~ according to claim 15, wherein the ~~psoralen derivative is 4,5',8-trimethylpsoralen and~~ the vertebrate animal is zebrafish.

17. (Presently Amended) The method ~~of claim 13 or 14~~ according to claim 13, wherein the ~~mutagenesis~~ mutation is introduced into a region containing a pyrimidine base.

18. (Presently Amended) A method for analyzing ~~the~~ a function of a gene of a vertebrate animal, comprising the steps of:

- a) treating a germ cell sperm of the vertebrate animal with a psoralen derivative;
- b) irradiating the treated germ cell with a ~~high energy beam~~ UV light;
- c) subjecting the irradiated germ cell sperm to artificial fertilization ~~to induce~~
mutagenesis in an embryo;
- d) ~~expressing a mutated gene; and comparing phenotype of a mutant having the~~
mutated gene with that of a wild type to find the difference of phenotype between the mutant and the wild type;
- e) ~~examining the correlation between the mutated gene and the mutant~~
phenotype determining the mutated gene; and
- f) analyzing functions of a gene of the vertebrate animal corresponding to the mutated gene from the said differences of phenotype.

19. (Cancelled).

20. (Presently Amended) The method of ~~claim 18 or 19~~according to claim 18, wherein the psoralen derivative is 4,5',8-trimethylpsoralen.

21. (Presently Amended) The method of ~~claim 18 or 19~~according to claim 20, wherein ~~the psoralen derivative is 4,5',8-trimethylpsoralen and the vertebrate animal is zebrafish.~~

22. (~~Presently Amended~~) ~~The method of claim 18 or 19 wherein the~~
~~mutagenesis~~mutation is introduced into a region containing a pyrimidine base.